Proposal for an LOI for ASFAP:
"International Centre for Experimental Physics in Africa (ICEPA)"

- Common LOI of IDWG and physics-education WG ?

- Much inspired by African Institute for Mathematical Sciences (AIMS) and other educational centres like Southern African Institute for Nuclear Technology and Sciences (SAINT)

- Educational training centre in instrumentation for basic and applied experimental physics

- High level lectures (<50%) and hands on experiences (>50%)

- Experimental installations and/or facilities installed at such a centre

- Curriculum typically one and a half year, including a 6 month research project

- Similar to AIMS but for experimental physics, strongly oriented towards instrumentation.

- With final examine and recognised diploma (association to AIMS or university)

Curriculum and skills:

Lectures and hands-on experiences over 12 month followed by 6 month research project, written report and defence (jury)

- Mechanics, design, technical drawings, some practical experience in a workshop

- Basics in electricity and electronics

- All steps of an experiment in physics from conception, planning to execution and analysis

- Learn to understand and if possible carry out some of the key experiments in modern physics including their respective physics

- Data acquisition systems and data analysis.

- Programming in C++ for example

- Statistical treatment of data and error analysis

- Transversal skills like collaborative working, communication skills, language skills, presentation

- Writing of scientific papers

- …..

The curriculum would be concluded by a final exam and a diploma.

Structure and necessary facilities of the centre

- Lectures will be delivered by renown teachers from Africa and the international community.

- Accommodation for students and teachers during the terms

- Student grants for 12-18 months

- Building and class rooms for teaching and learning

- Buildings well equipped with all technicalities to be able to install and develop instrumentational facilities, (electricity, water, internet, mechanical and electronics workshop…)

- Computing facilities

- Local technical and scientifique staff for maintenance and development

- Administrative complex to run the centre

- Administrative staff, security

- Scientific directorate

- …..

- Needs very strong and important investments for the hardware, for buildings, infrastructure, etc….
- The centre would live of international collaborations with universities and research laboratories to seek support and funding and investments in kind